Department of Theoretical and Applied Mechanics
University of Illinois, Urbana, Illinois

July 21, 1965

Mr. Wm. A. Greene, SC-NsG-434, Supplement No. 1
Grants and Research Contracts
National Aeronautics and Space Administration
1925 Florida Avenue, N. W.
Washington, D.C. 20546

SUBJECT: STATUS REPORT

Title: Line Integrals, Surface Integrals, Volumes, Centroids, and Moments of Inertia of a Class of Shells of Revolution and for a ~~Larger~~ Class of Shells

Period: January 1 through June 30, 1965

[redacted]

spd cards

PROGRESS:

During the indicated period no reports were prepared, but the work on shells outlined in the Status Report of February 3, 1965 has continued and at this writing the report is being typed for submission to your office under the title, "A Method for Determining the Optimum Design of a Class of Thin Shells of Revolution". The shells are generated by revolving the line defined by

$$\left|\frac{x}{a}\right|^{\alpha} + \left|\frac{y}{b}\right|^{\beta} = 1$$

about the x-axis.

Progress on the analysis of the small deflection of plates defined by the above equation is continuing. Further work on the energy solution indicates that for long slender plates twenty-five or thirty-six terms are required for the series expression representing the plate deflection.

The increased complexity of the solution has delayed the completion of this phase of the project but it is anticipated that a report can be prepared by mid-August, 1965 on the small deflections of these general plate shapes.

this research effort during the above period.

Submitted by

Will J. Worley
Principal Investigator